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J Learn Disabil 2002 35: 290
DOI: 10.1177/00222194020350040101

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The Effectiveness of a Highly Explicit, Teacher-Directed Strategy Instruction Routine: Changing the Writing Performance of Students with Learning Disabilities

Gary A. Troia and Steve Graham

Abstract

This study examined the effectiveness of a highly explicit, teacher-directed instructional routine used to teach three planning strategies for writing to fourth and fifth graders with learning disabilities. In comparison to peers who received process writing instruction, children who were taught the three planning strategies—goal setting, brainstorming, and organizing—spent more time planning stories in advance of writing and produced stories that were qualitatively better. One month after the end of instruction, students who had been taught the strategies not only maintained their advantage in story quality but also produced longer stories than those produced by their peers who were taught process writing. However, the highly explicit, teacher-directed strategy instructional routine used in this study did not promote transfer to an uninstructed genre, persuasive essay writing. These findings are discussed in terms of their relevance to effective writing instruction practices for students with learning disabilities.

An important component of effective writing is planning. This is especially evident in the behavior of skilled writers. Flower and Hayes (1980), for instance, found that adults usually develop goals to guide the composing process, generating and organizing writing content to meet their objectives. Gould (1980) reported that business executives spend about two thirds of their composition time planning, whereas Kellogg (1987) indicated that college students devote about one fourth of their writing time to planning. High levels of planning are especially apparent in the composing behavior of professional writers. For example, Joyce Carol Oates, the author of almost 70 books, has noted that she often produces 1,000 pages of notes for every 250 printed pages (Arana-Ward, 1997). Similarly, Kathy Reichs, author of *Deja Dead*, constructs an outline for each chapter and develops

character files and timelines (Minzeshheimer, 1997).

In contrast, children with learning disabilities (LD) tend to employ an approach to writing that minimizes the role of planning, especially planning in advance (Graham & Harris, 1996; Thomas, Englert, & Gregg, 1987). These students typically convert writing tasks into telling what they know about the topic (McCutchen, 1988). They plan as they write, summoning from memory any information that is somewhat relevant, writing it down, and using each preceding idea to stimulate the generation of the next one. A *Peanuts*® cartoon featuring a disheveled Peppermint Patty captures this approach to writing. Sharing her paper with the class, she reads that wind blows your hair around as you walk to school, that once you get there you don't have a comb, and that wind gives you something to write about when you are out

of ideas and can't see what you are writing. With this retrieve-and-write approach, little attention is directed to the development of rhetorical goals, the constraints imposed by the topic, the organization of the text, or the needs of the reader (Graham & Harris, 2000).

An important goal in writing instruction for students with LD, therefore, is to help them become more planful, integrating into their writing the same types of planning strategies that are employed by more skilled or sophisticated writers. One way of accomplishing this objective is to directly teach these students planning strategies that can be used during or in advance of writing, such as brainstorming or semantic webbing (Graham & Harris, 1997a). This approach has been quite successful, as explicit instruction in planning strategies has resulted in improved writing performance for stu-

dents with LD in almost 20 studies. For example, Englert et al. (1991) taught fifth and sixth graders with special needs how to use think sheets to plan, organize, write, edit, and revise two types of expository texts (explanation and compare/contrast). Teachers modeled aloud how to use the think sheets and accompanying strategies such as brainstorming, and students were provided with assistance until they could apply them independently. During modeling and guided practice, teacher-student dialogue about writing performance and strategy use was encouraged, and students supported each other by sharing and talking about their work with classmates. Over the course of a year, this instruction led to improved writing in the two instructed genres as well as in an uninstructed genre chosen by the student.

For almost 2 decades, Graham, Harris, and their colleagues have conducted studies examining the effects of planning instruction on the narrative and expository writing performance of students with LD (see Graham & Harris, 1993; Harris & Graham, 1996, 1999). Using the self-regulated strategy development (SRSD) model, they taught elementary and middle school students with LD a variety of planning strategies, including goal setting, brainstorming, semantic webbing, generating and organizing writing content using text structure, and reading to locate information. With SRSD, the teacher models how to use the target strategies along with procedures (e.g., self-monitoring, goal setting, and self-instruction) for regulating the strategies, the writing process, or behaviors that might impede writing performance (e.g., impulsiveness). Students are provided with temporary and calibrated support from the teacher and from their classmates as they learn to use the strategies, and their role as collaborators is stressed throughout instruction. Dialogue about the value, application, maintenance, and generalization of the strategies also frequently occurs. Teaching planning strategies via SRSD has led to improvements in

four aspects of students' performance: quality of writing, knowledge of writing, approach to writing, and self-efficacy (Graham, Harris, MacArthur, & Schwartz, 1991).

In a series of studies conducted by Wong and her associates (e.g., Wong, Butler, Ficzer, & Kuperis, 1996, 1997), adolescents with LD were taught planning strategies for three different types of essays: informative report, compare/contrast, and opinion. Wong, Butler, Ficzer, Kuperis, and Cosden (1994), for example, taught students to search their memory for relevant topics and ideas, revisualize events, re-experience emotions, detect and diagnose writing problems, and evaluate the clarity of the central theme of the paper when planning and writing informative reports. To teach these strategies, the instructor first modeled their use and then helped students learn how to use them independently by providing collaborative assistance in their application. Interactive discussion or dialogue also was an integral part of the regimen and occurred mostly during one-on-one conferences that focused on the writer's goals or on the clarity of the written product. This instruction resulted in more clearly written essays with better developed themes.

The present study extends previous research on teaching planning strategies to students with LD in three important ways. First, we examined if basic planning strategies could be taught effectively to students with LD using an explicit and highly teacher-directed procedure. Fourth- and fifth-grade students with LD were taught how to incorporate three common planning strategies into their current approach to writing: setting rhetorical goals, brainstorming ideas, and effectively organizing those ideas. The teaching routine used in this study employed a variety of components that are considered essential to effective strategy instruction (Graham, Harris, & Troia, 1998), including teacher description and modeling of the target strategies; individually tailored support (scaffolding) that was faded as

students moved toward independent use of the strategies; explanations about how the strategies work and what potential impact they have on performance; clarifications of when, where, and how the strategies could be used in the future; homework assignments designed to extend the use of the strategies to different settings and tasks; and feedback on the effects of using the strategies. Although the bulk of this instruction (i.e., modeling the strategies and providing scaffolded assistance in applying them) involved collaboration and dialogue between instructor and students, the participating children played a less active role in other aspects, as instructors provided students with information on how the strategies work, what their potential effects are, when and where to use them, and how to make possible modifications in their use. The instructor also took responsibility for providing students with specific feedback on how the strategies affected their writing performance. When such information was provided in the writing strategy studies reviewed earlier, it typically was gained through interactive dialogue between students and the instructor.

Although the importance of dialogue and student responsibility in establishing the rationale, value, impact, and general applicability of inculcated strategies is frequently promoted (Englert & Mariage, 1996; Harris & Pressley, 1991; Pressley & Harris, 1990), it is often assumed that teachers simply provide children with this information in the classroom (Poplin, 1988; Wong, 1994). Despite expert warnings to the contrary (e.g., Wong, 1994), it is not clear if giving students this information impedes their mastery of strategies, especially when they receive interactive and collaborative guidance in learning how to use them. The present study specifically addressed this issue with children with LD, as the instructional routine used to teach planning strategies was consistent with this more didactic approach. Because generalization in particular may be impaired when students with LD are not

encouraged to think for themselves about issues such as the rationale, worth, impact, or applicability of strategies (Wong, 1994), we implemented three teacher-directed procedures designed to facilitate transfer:

1. Instructors modeled how to use the three strategies (goal setting, brainstorming, and organizing) to perform several different types of tasks (including story writing), explaining how the strategies were adapted for each particular task and how they affected performance.
2. Instructors identified multiple tasks and situations for which students could use the strategies.
3. Students were given homework assignments in which they applied the strategies to activities other than story writing. For these assignments, instructors provided students with advice on how to apply the strategies to these new tasks and gave them feedback on each completed assignment.

Second, the present study extends prior research on teaching planning strategies to students with LD by comparing the effects of such instruction to the *process approach* to writing instruction. The process approach to writing is based on the work of Graves (1983) and Calkins (1981, 1986) and emphasizes,

1. frequent opportunities for writing using a predictable routine;
2. mini-lessons in which instruction in critical writing skills and strategies takes place when the need for such instruction becomes evident;
3. the formation of a community of writers writing for authentic purposes and audiences;
4. teacher and peer conferencing activities during which students receive individualized feedback about the substance and form of their compositions; and
5. regular occasions for sharing and publishing written work.

Although this is the most common approach to writing instruction in the elementary grades and has been advocated for use with students with LD by some authors (e.g., Wansart, 1988; Zaragoza & Vaughn, 1992), critics have maintained that it is not powerful enough for some students, particularly those with special needs (see Graham & Harris, 1994, 1997b). They argued that this approach relies too heavily on informal or incidental methods of learning and that many students with learning difficulties do not acquire a variety of cognitive and metacognitive strategies and skills unless frequent and comprehensive explicit instruction is provided (Brown & Campione, 1990).

Although several studies have found that the writing of students with LD improves when strategy instruction is integrated into the process approach to writing (e.g., Danoff, Harris, & Graham, 1993; MacArthur, Graham, Schwartz, & Shafer, 1995), we were unable to locate any studies that directly compared these two instructional approaches. In the present study, students were randomly assigned either to a strategy instruction or to a process approach to writing condition. The process writing condition mirrored the approach used in the participating students' schools, where children spent most of their writing time drafting, editing, revising, and publishing their compositions but no special attention was placed on advance planning; it was neither emphasized nor discouraged. Thus, some of the key features of exemplary writing process instruction were not part of the process writing condition in this study, primarily because they were not prominent features in the participants' classroom writing programs.

The third and final extension of previous research involves the effectiveness of brainstorming when it is more open-ended and not specifically tied to the structural features of the genre under consideration. In most previous strategy instruction studies in which students with LD applied this strategy, brainstorming was more constrained,

as students with LD generated ideas for specific elements or parts of a story or essay in advance of writing (e.g., De La Paz & Graham, 1997; Englert et al., 1991; Graham & Harris, 1989; Sawyer, Graham, & Harris, 1992). In the present study, students were taught to generate a list of possible ideas to use in their stories. Although students in both the strategy and the process writing conditions were familiarized with the basic parts of a story and persuasive essay prior to the collection of baseline data, they were not shown how to brainstorm ideas for specific elements. We decided to use a more open-ended approach to decrease the possibility that brainstorming would be welded to a specific genre, as part of our evaluation involved assessing transfer effects to a second genre, persuasive essay writing. Nevertheless, in a previous study in which students with LD brainstormed in an open-ended fashion, only minimal improvements in writing quality were obtained (Troia, Graham, & Harris, 1999). In that study, no explicit connection was made between strategy use and the subsequent quality of stories during instruction. Thus, students may have generated and used ideas without considering whether they strengthened or weakened the story line. This limitation was rectified in the present study, as the participating students received feedback on how strategy use affected overall story quality.

We anticipated that teacher-directed strategy instruction would have a more positive impact on the story writing performance of students with LD than process writing instruction. Specifically, it was expected that the stories written by students assigned to the strategy instruction condition would be longer and qualitatively better than the stories produced by their peers in the process writing condition. However, no specific predictions were made concerning transfer of strategy instruction to an uninstructed genre, persuasive essay writing. As noted earlier, some theorists (e.g., Wong, 1994) contend that students with LD are unlikely to

generalize learned strategic behavior if they are not provided with sufficient opportunities to fully reflect on and discover for themselves the underlying rationale, significance, influence, and general applicability of the inculcated strategies. On the other hand, students in the teacher-directed strategy instruction condition were shown how the strategies could be used to accomplish several different tasks, received information on when and where to apply the strategies, and used the strategies to complete homework assignments on tasks other than story writing. These activities may have been potent enough to induce strategy transfer.

Method

Participants

Twenty fourth- and fifth-grade students with LD from two suburban elementary schools in a mid-Atlantic school district participated in the present study. Each student met the following stepwise criteria for inclusion in the study:

1. identification by the school district as having LD, based on a significant discrepancy between ability and achievement using a regression formula provided by the state;
2. a verbal or Performance IQ scale score between 80 and 135 on the *Wechsler Intelligence Scale for Children—Third Edition* (WISC-III);
3. an achievement discrepancy of at least one standard deviation in reading or written expression as determined by composite score on a standardized norm-referenced test of educational achievement;
4. absence of sensory, motor, and emotional disabilities;
5. English as the primary language; and
6. the ability to write four coherently connected sentences, based on writing samples provided by classroom teachers.

Furthermore, the students' teachers indicated that each child had difficulty with composing written text, and all students had Individualized Education Program (IEP) objectives for improving their writing skills. More information regarding the participants' characteristics is presented in Table 1.

Assignment to Conditions

The participants were randomly assigned to either an experimental treatment group receiving advance planning strategy instruction or a comparative treatment group receiving a modified version of process writing instruction. The comparative treatment approach was compatible with the process writing instruction that students regularly received in their classrooms (see Calkins, 1981, 1986; Graves, 1983).

Separate *t* tests were performed to determine if there were significant differences between the two groups with respect to chronological age, IQ, reading and writing achievement, or number of years enrolled in special education. No significant differences between groups were found (all *ps* > .05). Furthermore, a series of contingency table analyses were conducted to determine if there were any significant group differences in terms of grade, gender, socioeconomic status, or racial diversity. Using Goodman and Kruskal's tau, no significant differences between groups were observed (all *ps* > .23). Further verification that the two groups were equivalent prior to treatment was obtained by analyzing their performance on a pretest story and essay. There were no significant pretest differences between groups with respect to story or essay length, overall quality, or advance planning time (all *ps* > .18). Mean scores and standard deviations for these measures are presented by group in Tables 2 and 3.

In each condition, instruction was carried out in groups of two in a quiet room in the participating school. There were 10 instructional pairs (5 per treatment condition) in all. Graduate stu-

dents with prior teaching experience who were unaware of the anticipated outcomes of the study served as instructors and, in most cases, taught one instructional group from each condition. The first author worked with one pair who received process writing instruction. Before the beginning of the study, the instructors were trained to administer instruction for each condition. Lesson plans were developed for all instructional sessions. During the administration of the two treatments, instructors were directed to check off each step of a lesson as it was completed. Instructors maintained logs to record each student's planning and writing time, comments made by each student, and observations of each student's behavior.

Pre-Instruction

Following random assignment to conditions, all students received instruction in their assigned pairs in identifying and generating examples of the key elements of stories and persuasive essays. This pre-instruction ensured that students in both conditions were familiar with the basic structure and components of these two genres. The acronym SPACE (Setting, Problems, Actions, Consequences, Emotions), printed on a small chart, was used to introduce the five primary elements of a well-developed narrative. The acronym DARE (Develop a position statement, Add supporting arguments, Report and refute counterarguments, End with a strong conclusion) was used to illustrate the four primary elements of an opinion essay (see De La Paz & Graham, 1997). After the elements of each genre were introduced, the instructor presented an example of each element from a sample story or essay. The students and the instructor then read a different story and essay together and identified the associated elements. Next, students were asked to independently identify the elements in one or more stories and essays until a criterion of 100% correct identification was achieved. Finally, students were

TABLE 1
Characteristics of Participants by Experimental Group

Variable	Strategy instruction ^a		Process writing instruction ^a		Total sample ^b	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Grade (<i>n</i>)						
4	7		6		13	
5	3		4		7	
Gender (<i>n</i>)						
Boys	8		8		16	
Girls	2		2		4	
Ethnicity						
European American	8		5		13	
African American	1		4		5	
Asian American	0		1		1	
Hispanic	1		0		1	
Free/reduced price lunch (<i>n</i>)	3		2		6	
Additional disability (<i>n</i>)						
ADHD	1		2		3	
Language impairment	2		2		4	
Self-contained classroom (<i>n</i>)	3		4		7	
Age in months	122.30	8.35	124.60	6.64	122.83	7.88
IQ						
Verbal scale	107.40	16.17	103.90	9.18	108.57	14.84
Performance scale	97.60	17.65	106.90	16.37	102.87	16.44
Reading composite score ^d	85.70	15.13	83.90	8.29	87.60	14.16
Writing composite score ^{de}	79.00	14.12	91.00	8.41	87.05	13.28
Number of years in special education	2.20	1.32	2.40	1.84	2.20	1.58

Note. ADHD = attention-deficit/hyperactivity disorder.

^a*n* = 1. ^b*N* = 20. ^cIQ tests used were the *Wechsler Intelligence Scale for Children—Third Edition* (WISC-III) and the *Stanford-Binet Intelligence Scale—Fourth Edition* (SBIS-4). ^dAchievement tests used included the *Wechsler Individual Achievement Test* (WIAT), the *Woodcock-Johnson Psychoeducational Battery—Revised* (WJ-R), the *Woodcock Reading Mastery Tests—Revised* (WRMT-R), and the *Wide Range Achievement Test—Third Edition* (WRAT-3). ^eScores on writing measures were available for only 7 participants in each group.

asked to tell a story about a picture and to present an oral essay in response to a question prompt, noting each element as it was included. The instructor informed the students that the charts would be available for reference (the DARE chart was available only when the student was asked to write an essay) and that the instructor would remind the students to use the charts.

Writing Probes

Students individually completed three story writing probes, administered at pretest (after pre-instruction), posttest, and maintenance (4 weeks after post-test probe administration). Persuasive

essay writing probes were administered at pretest and posttest to measure strategy transfer effects. It should be noted that only half the participants completed story writing maintenance probes. These were administered at the end of the school year, and school testing and scheduling difficulties meant that some children were unavailable to complete this probe.

At the beginning of each writing probe session, the examiner reviewed the key elements of the genre being assessed and the corresponding acronym (SPACE or DARE) and then instructed the student to select one of two picture prompts or topic prompts and to write a composition for the selected prompt.

Lined paper and a pencil were provided. The student was informed that all of his or her papers would be collected and that the compositions would be typed and bound so that he or she could share them with family, friends, and teachers. No feedback was provided about the content or quality of the student's compositions during probe administration. The examiner did provide the correct spelling for individual words when requested.

The suitability of the selected pictures as story writing prompts had been established in a study with fifth-grade students with LD (Troia et al., 1999). An example of a picture prompt depicted a ship caught in a storm at

sea. Each time students were asked to write a story, they chose one of two pictures. The provision of choice helped control for variations in motivation and prior knowledge. Similarly, for the persuasive essay writing probes, students selected between two written topic prompts read aloud by the instructor. The suitability of these prompts was established in a study by De La Paz and Graham (1997). An example of an essay topic prompt was, "Should students be required to wear uniforms at school?"

Six picture prompts were randomly selected from a larger pool and paired for use at pretest, posttest, and maintenance. The pairs of story writing prompts were counterbalanced across participants and testing conditions. Similar procedures were used in assigning prompts for persuasive essay writing. Probes for stories and essays were administered on 2 consecutive days and counterbalanced for order of presentation.

Treatment

For the experimental treatment group, instruction was criterion based. Students in the process writing condition participated in the same number of instructional sessions as students in the strategy training condition and wrote on the same topics. There was no statistically significant difference in the amount of instructional time (in minutes) per session that the strategy instruction group ($M = 75.13$, $SD = 19.72$) or the process writing group ($M = 77.19$, $SD = 4.77$) received, $t(7) = .07$, $p = .95$. Total instructional time ranged from 9.3 to 10.7 hours for the strategy instruction group and 9.1 to 10.8 hours for the process writing instruction group.

The advance planning strategies taught to the participants in the strategy instruction group included the following: identifying the purposes of the activity and setting appropriate goals, brainstorming ideas, and organizing those ideas. The acronym STOP & LIST (Stop, Think Of Purposes, and List

Ideas, Sequence Them), printed on a small chart, was used to facilitate the teaching of these components. The process writing instruction delivered to the students in the process writing group was segmented into four steps: writing a rough draft, revising the rough draft, proofreading and editing, and publishing the final version. These steps were printed on a chart to facilitate instruction. In both conditions, the SPACE chart listing the five elements of a narrative was used to facilitate story writing.

Strategy Instruction in Advance Planning. During the first session, the instructor explicitly described the planning strategies and introduced the STOP & LIST acronym. The students learned about various contexts in which the STOP & LIST strategies could be used to aid their performance. Then the instructor modeled how to use the strategies to perform two different tasks: reading an expository passage and writing a story. While modeling story writing, the instructor emphasized generating as many ideas as possible for each of the five elements of a story and modifying, adding, and deleting ideas as necessary. After performing each task, the instructor commented about the effectiveness of the procedures used and elicited the students' opinion about the instructor's task performance. Next, the instructor identified for the students the key similarities and differences in strategy use for the modeled tasks. Finally, the instructor compared students' pretest writing behaviors with those of his or her own and then identified ways in which advance planning could have aided students' performance.

During the second session, students were asked to recall and rehearse the mnemonic STOP & LIST. The instructor then modeled the strategies included in the mnemonic with two tasks: planning a trip and writing a short story. As before, the instructor identified the similarities and differences in how the strategies were used for both tasks. The instructor asked the

students to identify prior opportunities they had had to use any or all of the advance planning strategies.

As in the previous session, students recalled and rehearsed the mnemonic STOP & LIST at the start of Session 3. The instructor then shared with the students his or her evaluation of each story element in their pretest stories using a 5-point rating scale (see Appendix A). The instructor explained how the planning strategies in STOP & LIST could help them write better stories. Next, the instructor identified some situations in which some or all of the strategies could be used, such as planning for a new vegetable garden and going on a shopping excursion. The instructor told students that they would practice using STOP & LIST to write stories in upcoming sessions and that they would have homework assignments to receive additional practice applying STOP & LIST with other tasks. The instructor emphasized that students could facilitate learning the strategies by employing good learning behaviors, such as attending closely, devoting effort, and being persistent.

In the fourth session, the instructional goals established in the previous session and the means for accomplishing them were reviewed. Then, students recalled and rehearsed the STOP & LIST mnemonic. Next, the instructor and the students collaboratively wrote a story using the advance planning strategies. Once the story was completed, the instructor shared his or her evaluation of the story with the students using the rating scale previously described (see Appendix A) and discussed how the STOP & LIST strategies aided their performance. Finally, the instructor gave students a homework assignment for applying the strategies (e.g., planning to bring home a new pet, planning a birthday party for a friend) and offered suggestions for modifying the procedures for the assigned task.

During the fifth session, the students' completed homework was reviewed. Then, they recalled and rehearsed STOP & LIST until they could

recite it with 100% accuracy. The instructor and students once again wrote a story together using the three strategies of STOP & LIST. As before, the instructor used the rating scale to evaluate the students' story, sharing how the use of advance planning strategies improved their performance. Homework was assigned as before, and the instructor described how the strategies could be modified to complete the homework.

At the start of Session 6, the instructor first reviewed the completed homework assignments, and then students briefly reviewed the STOP & LIST acronym. Next, students used the STOP & LIST advance planning strategies to write stories by themselves. The instructor provided assistance only if needed. Once again, the instructor evaluated the students' compositions and assigned homework.

During Session 7, after reviewing completed homework assignments, students independently practiced using STOP & LIST to compose stories. At this point, all the students in the strategy instruction condition could apply the STOP & LIST strategies without assistance. The instructor evaluated students' performance using the rating scale, emphasizing the effects of the strategies on their writing. The instructor ended the session by reviewing the modifications that students had made when using the strategies in previous sessions and on homework assignments (e.g., listing events in chronological order versus order of importance, listing items within categories) and by describing situations in which the advance planning strategies of STOP & LIST might be applied in the future (e.g., planning to do a science project, planning for a day trip to an amusement park).

Process Writing Instruction. During the first session, the instructor and the students reviewed the steps involved in using the process approach to writing. For each of the four steps (drafting, revising, proofreading and editing, and publishing), the instructor

explicitly described the activities to be completed. For example, when revising a rough draft, one looks for places in which more details could be added or different words could be used for clarity. The instructor then modeled the use of the four steps to produce a story, sharing the final product with the students. The instructor also described how using the process approach could help the students write better stories.

At the beginning of Session 2, the instructor asked the students to recall and rehearse the steps of the writing process. The instructor then asked students to identify tasks and places, such as the general education classroom, in which they had used any or all of the steps of the process writing approach. Although advance planning was not emphasized, students were not discouraged from planning prior to composing at any point in the study (none did). Students were told that they would use the process approach to write stories in upcoming sessions and that at the end of the study, they would place their favorite stories in a portfolio to be shared with their family, friends, and teachers. Next, the instructor helped each student to use the writing process to produce a story (collaborative writing). Once the story was completed, each child shared it with a partner, who was asked to identify what he or she liked about the story and how it could be improved.

During Session 3, students reviewed the four steps of the writing process until they could be repeated with 100% accuracy. Then, the students applied the process approach, receiving instructor help as needed, to write a story. After completing their stories, the students shared them with their partner, receiving feedback on the story's strengths and suggestions for improvement.

In the last four sessions (Sessions 4–7), students practiced using the writing process to compose their stories and continued to share and critique the products written by their partner. The instructor provided assistance if needed,

but all the children in this condition could independently apply the process writing procedures by the final session. During the last session, the students bound their favorite stories into a portfolio. The instructor then reviewed the instructional program and pointed out how the writing process helped the students with their writing.

Treatment Validity

To ensure that the two conditions were implemented as planned, four procedures were followed. First, the instructors were trained until they were 100% successful in implementing all instructional procedures. The instructors were directed to use the lesson plan checklists to document each step of instruction as it was completed and to maintain their instructional logs. Second, weekly staff meetings were held at which instructors reported on the assessment and instruction completed that week and discussed and resolved any problems that occurred. Third, the first author randomly observed one third of the instructional sessions. During these observations, the investigator used a corresponding lesson plan and marked off each step as it was performed by the instructor. Any instructor not implementing 100% of the steps in the proper sequence attended a debriefing with the investigator after the session. Fourth, all sessions were audiotape-recorded, and one third of the tapes were randomly selected for review by an advanced undergraduate student in education. For all tapes scored, an average of 97.7% of the instructional steps detailed in the lesson plans were completed.

Measures

Prior to scoring, all written plans and compositions collected during pretest, posttest, and maintenance probe sessions were typed, and spelling, punctuation, and capitalization errors were corrected. This eliminated any potential bias that mechanical factors such as handwriting or spelling might exert

during the scoring process. All identifying information was removed from the papers as well.

Product Measures. Two product measures were used to evaluate students' stories and opinion essays: length and overall quality. For *composition length*, the word count function of a word processing software package was used to score all stories and essays. Stories and essays were scored for *overall quality* using an analytic rating scale developed for each writing genre. The rating scale for stories contained two subscales that assessed different aspects of the students' narratives: organization and appeal (see Appendix B). Scores for each subscale ranged from 1 (lowest quality) to 8 (highest quality). *Organization* referred to the degree to which the story elements were arranged in a logical order without digressions or inconsistencies, whereas *appeal* referred to the degree to which the story sparked the reader's interest, in part through the use of stylistic devices such as humor, flashbacks, and foreshadowing. The overall quality rating for each story was the average of these two subscale scores.

The analytic rating scale for essays was composed of two subscales: organization and clarity (see Appendix C). Again, scores for both subscales ranged from 1 (lowest quality) to 8 (highest quality). *Organization* in this case referred to how well a coherent plan was sustained throughout the essay, whereas *clarity* referred to the degree to which one or more lines of argument were clearly articulated to support the premise or address plausible counterarguments. The overall quality rating for each essay was the average of these two subscale scores.

Two preservice teachers who were unfamiliar with the purpose and design of the study scored all of the stories and essays for quality. The interrater reliability was .80 for both stories and essays. The average of the overall quality scores assigned by the two raters was used in all subsequent data analyses.

Process Measures. Two process measures were used for both stories and essays: advance planning time and propositions in written plans. The instructor recorded the *advance planning time* (i.e., elapsed time between the instructor's prompt to begin and the initiation of writing) in seconds for each probe using a stopwatch. *Propositions* were defined as written utterances that correspond to a complete thought and include a predicate (Stein & Glenn, 1979). The number of unique propositions included in each plan for stories and essays was independently tallied by two preservice teachers unfamiliar with the purpose and design of the study. Interrater reliability was .98 for story plans. (No written essay plans were produced at any point during the study.) The scores assigned by the two raters were averaged for the purposes of data analysis.

Results

Prior to analyzing the data for significant treatment effects, difference scores (posttest minus pretest and maintenance minus pretest) were calculated for all of the writing measures for stories and generalization essays. Because the reliability estimates for the dependent writing measures were .80 and above, there was little concern regarding the use of difference scores to control for pretest performance. Moreover, both the magnitude and the direction of treatment effects are readily observable with difference scores. Group means and standard deviations for pretest, posttest, maintenance, and difference scores on the writing measures for stories and essays, respectively, are presented in Tables 2 and 3.

All posttest and maintenance difference scores were analyzed for treatment differences with *t* tests for independent means. The only exceptions involved written planning propositions for maintenance stories and posttest essays. No statistical analyses were performed for these two measures because students did not generate any written plans for these probes.

Product Measures

Stories. Significant treatment group differences were evident in posttest difference scores for story quality, $t(18) = 2.11, p = .05$, favoring the strategy instruction group ($ES = 1.00$). However, posttest gains in story length were not significantly different between groups, $t(18) = -0.23, p = .82$. An examination of the data in Table 2 indicates that students in the strategy instruction group made small but positive gains (about a half-point increase on an 8-point scale) in the overall quality of their stories, whereas students in the process writing group actually dropped in their performance on this measure following instruction. Both groups made minimal gains in the length of their stories after instruction.

The maintenance difference scores for story quality also showed a significant treatment group effect, $t(8) = 3.03, p = .02$, again favoring the strategy instruction group ($ES = 2.05$). Furthermore, there was a significant group difference in maintenance difference scores for story length, $t(8) = 4.24, p < .01$, favoring the strategy instruction group ($ES = 2.87$). Closer inspection of the data indicates that children in the strategy instruction group wrote stories of higher quality at maintenance than at pretest, whereas students who received process writing instruction composed stories at maintenance that were judged to be of lower quality than those written at pretest. Likewise, students in the strategy training group wrote substantially longer stories (about a 50% increase) at maintenance than at pretest, whereas children in the process writing group wrote substantially shorter stories (almost a 60% decrease).

Essays. There were no significant differences between groups in posttest difference scores for essay quality, $t(18) = -1.40, p = .18$, or essay length, $t(18) = 0.58, p = .57$. The data reported in Table 3 reveal that the posttest essays written by children in the strategy instruction group were slightly longer

TABLE 2
Pretest, Posttest, Maintenance, and Difference Scores on Writing Measures for Stories

Dependent product measure	Strategy instruction		Process writing instruction		<i>t</i>	<i>df</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Quality						
Pretest	4.58	1.74	5.45	.88		
Posttest	5.00	1.55	4.83	.71		
Maintenance	5.20	1.93	3.65	.98		
Pre/post difference	0.43	1.40	-0.63	.71	2.11*	18
Pre/maintenance difference	0.60	1.97	-2.30	.86	3.03*	8
Length						
Pretest	92.50	57.26	86.90	31.67		
Posttest	93.50	50.91	91.90	36.56		
Maintenance	121.00	90.45	50.20	14.70		
Pre/post difference	1.00	44.75	5.00	30.38	-0.23	18
Pre/maintenance difference	49.20	41.25	-36.40	18.39	4.24*	8
Advance planning time						
Pretest	0.15	.24	0.15	.24		
Posttest	6.10	7.67	0.25	.42		
Maintenance	1.80	.84	1.00	1.00		
Pre/post difference	5.95	7.69	0.10	.32	2.40*	18
Pre/maintenance difference	1.70	.67	0.90	.89	1.60	8
Propositions in plans						
Pretest	0.00	.00	0.00	.00		
Posttest	4.95	7.29	0.00	.00		
Maintenance	0.00	.00	0.00	.00		
Pre/post difference	4.95	7.29	0.00	.00	2.15*	18
Pre/maintenance difference	0.00	.00	0.00	.00	n/a	

Note. Pre/post differences were calculated for all 10 students in each group, whereas pre/maintenance differences were calculated for only those 5 children in each group who were able to complete maintenance probes.

* $p \leq .05$.

but of lower quality than their pretest essays. In contrast, the posttest essays written by students in the process writing group improved slightly in overall quality but were shorter in length compared with essays written prior to instruction.

Process Measures

Stories. There was a significant group difference in posttest difference scores for advance planning time, $t(18) = 2.40, p = .03$, favoring the strategy instruction group ($ES = 1.46$), and for written planning propositions, $t(18) = 2.15, p = .05$, again favoring the strategy instruction group ($ES = 1.36$). Examination of the scores reported in Table 2 shows that children in the strategy instruction group spent more time (approximately 6 minutes, compared

with less than 1 minute at pretest) planning their stories in advance after treatment, but the amount of time devoted to advance planning by students in the process writing group remained virtually unchanged from pretest to posttest (less than 1 minute). It should be recalled that advance planning time refers to the elapsed time before composing is begun, so that it includes written planning time, mental planning time, or both. Half the students in the strategy instruction group developed written plans for their postinstructional stories, which included, on average, about 5 propositions, whereas none of the children in the process writing group did so for theirs. In contrast to the analysis for posttest difference scores, the maintenance difference scores showed no significant group effect for story planning time, $t(8) = 1.60, p = .15$.

Essays. No significant group differences were observed in posttest difference scores for essay planning time, $t(18) = -0.27, p = .79$. Data from Table 3 indicate that students in both groups spent little or no time (less than 1 minute) on advance planning for their pretest or posttest essays.

Discussion

In the present study, students with LD learned to set rhetorical goals, brainstorm ideas, and organize their ideas prior to writing stories. The procedures used to teach these strategies were explicit and relied heavily on teacher direction. Instructors modeled how to use the strategies and provided students with scaffolding as they learned to apply them. Such collaborative support is common in current ap-

TABLE 3
Pretest, Posttest, and Difference Scores on Writing Measures for Essays

Dependent product measure	Strategy instruction		Process writing instruction		<i>t</i>	<i>df</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Quality						
Pretest	4.78	1.67	4.40	1.14		
Posttest	4.53	1.69	4.88	1.21		
Pre/post difference	-0.25	1.37	0.48	.91	-1.40	18
Length						
Pretest	71.50	44.81	56.40	21.29		
Posttest	77.10	56.11	55.00	20.56		
Pre/post difference	5.60	34.69	-1.40	15.78	0.58	18
Advance planning time						
Pretest	0.15	.34	0.10	.21		
Posttest	0.35	.94	0.40	.84		
Pre/post difference	0.20	1.01	0.30	.63	-0.27	18
Propositions in plans						
Pretest	0.00	.00	0.00	.00		
Posttest	0.00	.00	0.00	.00		
Pre/post difference	0.00	.00	0.00	.00	n/a	

proaches to strategy instruction (e.g., Deshler & Schumaker, 1986; Englert et al., 1991; Graham et al., 1998). Moreover, instructors provided students with information on the rationale, value, impact, and general applicability of the three planning strategies. According to several observers (Poplin, 1988; Wong, 1994), teachers often use this same approach to deliver this critical information. However, many researchers have recommended and employed a more interactive approach to promote the development of this knowledge, using dialogue, observation, and student reflection (Englert et al., 1991; Harris & Graham, 1996; Wong, 1994, 1997).

Consistent with our predictions, teaching students with LD three basic planning strategies via an explicit and highly teacher-directed approach had a positive, albeit modest, impact on their writing performance. Immediately following the instruction that focused on story writing, students who were taught to use these strategies wrote stories that were qualitatively better than those produced by their peers assigned to the process writing condition. Some caution must be exer-

cised in interpreting performance on the maintenance story writing probe administered 4 weeks later, as only half the students were available for testing at this point, but the findings were again consistent with predictions. Students who were taught the planning strategies produced not only qualitatively better stories than their process writing group peers, but longer stories as well. A particularly noteworthy case is Justin (a pseudonym). Justin wrote a pretest story of 154 words that received an overall quality rating of 6.25. He wrote a posttest story, for which he generated 20 propositions in a written plan, of 214 words that received a quality rating of 6.50. Although Justin did not develop a written plan for his maintenance story, he nevertheless produced a story that was 300 words long and received an overall quality rating of 7.25. In addition to showing substantial improvement in quality and length following strategy instruction, the structural integrity of his narratives increased dramatically. (All three of Justin's stories are presented in Figure 1.) Whereas his pretest story included basic elements associated with setting (i.e., time) and plot (i.e., a prob-

lem, an attempt to solve the problem, an outcome, and an emotional response to the outcome), his stories written after strategy instruction were much richer in detail and incorporated more sophisticated elements. For example, his posttest and maintenance stories included a captivating title, greater elaboration about the traits of the protagonist, more integral use of time and locale, explicit character goals, and more interesting plot lines. Moreover, his posttest story included dialogue, whereas his maintenance story clearly established the expectation of a sequel. The transformation of Justin's writing, although extraordinary by comparison with the changes evident in the compositions of other students, suggests that advance planning strategies can have a powerful impact on students' writing.

To determine if the students who completed the maintenance story writing probe were similar to those who did not, we carried out two procedures. First, we compared the performance of the children who completed the maintenance probe with those who did not on relevant characteristics (IQ, age, reading and writing performance,

Pretest Story

Once upon a time there was [a] pirate ship. It was just built a few weeks before it set sail. Everybody was really excited about the ship, but it was winter and it was very cold, and some people did not want to go. There was a kid by the name of Mark. He really wanted to go on the voyage but he had a problem. He couldn't just go, there were tryouts. The rules were [that] there was a race between everybody who wants to tryout. So Mark practiced and practiced for five hours a day for a week. When it was time for the race, Mark was ready. The gun sounded and they were racing. Mark and two other boats were tied for first. They raced for two hours. Finally, they reached the finish line. Mark had won by a foot. Mark was going on the voyage. He was very happy and very proud.

Posttest Story*The Path to Freedom*

Once upon a time, in Denmark in 1944, there were two Jews named Jeff and Nick. They were brothers. This was when they were having World War II, so the Nazis were looking for Jews and putting them in concentration camps. Jeff and Nick were Jews, so they were scared that they were going to be put in a concentration camp. But, they were smart and they had an idea. They could hide. So, the next morning, they got in their canoe and started their long journey. After two days, they came to a cave. They went in the cave looking for a hiding place. They found one. They placed their stuff in it. But one day they were in town and two Nazis came and asked them, "Are you Jews?" They said, "No, we are Catholics. We don't like Jews." Of course, this was hard for them to say because they were Jews. The Nazis looked at them and said, "Have a nice day, sirs." As soon as the Nazis left, they raced to their hideout, packed their stuff, and they moved to America. If they [stayed] in their hideout, then the Nazis might wonder, "Why are they hiding?" So, they moved to America. No one ever knew their secret.

Maintenance Story*Jackson's Life in the 1700s*

He never really wanted to be a sailor, but he did so because he was running away from troubles. He was a volunteer, most sailors were. His name was Jackson and he lived in a lower class town almost all of his life. On his first voyage to the New World, he felt sad and disappointed. He was a little excited to go to the New World, but not enough to make him a sailor for that reason. No, it was those troubles. He had no family back at England. No wife. No parents, that is, no parents that raised him [properly]. It was that his mother gave birth to him and then the rest was [up] to him. He had raised himself. As for his father, he was a drunk, never proud of him, caring more for his bottles of scotch.

At Jackson's first voyage a huge tidal wave struck the boat and set it way off course. If it was not for a gust of wind, the boat would have gone back to England. After three nights voyage, a group of sailors were drinking. Pip, who was one of the sailors, refused the alcohol and went to his cabin. When they asked Jackson, he remembered scotch was [a] very addictive kind of alcohol, along with rum. So, he said no also. Later that night, four of those drinkers jumped off the boat and into the sea. Jackson was glad he didn't have any.

Five months later, land was cited and the [boat] set ashore. He was relieved from all the troubles he had got away from when he was in England. Jackson spent 15 years in the New World and had a good life. When he heard about the west, Jackson ventured on into the Oregon Trail . . .

formance, which suggests that the obtained maintenance results are valid and representative of the entire sample.

Hayes and Nash (1996) have argued that the assumed positive effects of planning instruction in writing can often be attributed to the intervening variable *time on task*. According to their data, the quality of text is strongly and positively related to the amount of time students spend planning and writing. Time on task did not appear to be a confounding factor in the present study, however, as there was no difference in the combined planning and writing time for stories of students in the two instructional conditions at either posttest or maintenance, $t(18) = .318, p = .75$, and $t(8) = 1.22, p = .26$, respectively. One might argue that our attempts to eliminate potential individual differences in the knowledge of text structure organization during pre-instruction and writing probe administration via the SPACE and DARE charts may have affected our findings. That is, although students in both experimental conditions received this genre-specific information, it may have interacted with the strategy instruction routine in unanticipated ways to produce the observed group differences. One way to examine this possibility in future studies is to review text structure with only some of the participants in each group and to administer additional writing probes in which genre-specific organizational cues are not available.

It should further be noted that students with LD in the present study were taught the same three planning strategies as students with LD in a previous study by Troia et al. (1999). Although learning these strategies had a positive effect on the length and schematic structure of students' stories in this previous investigation, the impact on overall story quality was minimal. Troia et al. (1999) indicated that improvements in quality were not obtained because participants did not consider how the ideas they brain-

FIGURE 1. Pretest, posttest, and maintenance stories written by Justin.

number of years in special education, and hours per week of special education services). No significant differences were found (all $ps > .44$). Second, we compared these students on their posttest difference scores for story and essay quality, length, and planning time, and number of planning proposi-

tions for stories. Again, no significant differences were observed on any of these measures (all $ps > .05$). Thus, students who were available to write their maintenance stories appeared to be similar to students who were not, in regard to both their learning characteristics and their postinstructional per-

stormed added to or detracted from the overall quality of their compositions. In contrast to other studies in which brainstorming was more tightly related to each part of a story and overall quality subsequently improved (e.g., Graham & Harris, 1989; Sawyer et al., 1992), the brainstorming procedure applied in the present study and in the Troia et al. (1999) study was more open-ended, as students simply generated a list of writing ideas to use in their story. To enhance the power of this more open-ended approach to brainstorming in the present study, students were provided with feedback on how their use of the planning strategies affected overall story quality. This was not done in the previous study by Troia et al. (1999). As noted earlier, story quality in our study improved when students were taught how to use the three planning strategies. Although it is not possible to isolate the reasons for this improvement, as the present study and the one conducted by Troia et al. (1999) differ on more than one dimension, this finding does indicate that improvements in the overall quality of stories written by students with LD are possible when an open-ended approach to brainstorming is combined with feedback regarding the impact of advance planning on writing quality.

The findings from the present study and from several previous investigations (e.g., Danoff et al., 1993; MacArthur, Schwartz, & Graham, 1991) also raise some concerns about overreliance on instructional approaches to writing for students with LD that depend heavily on the use of incidental or informal methods of teaching, such as the process approach to writing. In the present study, the story writing performance of students assigned to the process writing condition declined over the course of the study, especially in terms of overall quality. In other studies, improvements in the writing performance of students with LD were obtained when more explicit instructional procedures were incorporated

within this approach (Danoff et al., 1993; MacArthur et al., 1991). Additional research is needed, however, before any conclusions can be drawn about the general efficacy of writing approaches such as process writing for students with LD. Future investigations should include a more fully explicated model of process writing than was used in the present study. For example, we did not stress planning, include mini-lessons or conferencing activities, or foster the development of a writing community. In any event, we anticipate that both the informal or incidental methods underlying approaches such as process writing and the more explicit and direct instruction of skills and strategies are necessary components of an effective writing program for students with LD (Graham & Harris, 2001). Consider, for instance, the skill of spelling. In a recent review of the literature, Graham (2000) found that incidental and direct instructional approaches both contributed to the development of spelling competence in good and poor spellers.

Despite the positive impact of the strategy instruction procedures on the story writing performance of the participating students, the results concerning generalization and application of the inculcated strategies over time were discouraging. Although students in the strategy instruction group spent more time planning their posttest stories in advance than their peers in the process writing group, only half of the children who were taught planning strategies overtly used them at this point. Four weeks later, the two groups of students did not differ in the amount of time spent planning in advance, nor did children in the strategy instruction group overtly use any of the planning strategies they had been taught. When children in the two groups were asked to write a paper in an uninstructed genre, persuasive essay writing, there were no differences either in the amount of time spent planning in advance or in the length and quality of the resulting essays. Moreover, none of

the students who were taught the three planning strategies overtly used them when writing a persuasive essay, despite having been given opportunities through assigned homework to generalize STOP & LIST to diverse tasks. One potential reason for the lack of advance planning for the uninstructed genre may be that only three homework exercises were actually completed by most students, which may have done little to deepen their appreciation of the broad utility of the planning strategies or to build their internal capacity for generalizing what they had learned.

These findings contrast significantly with results obtained in other studies in which planning strategies were taught to students with LD. For example, in the Troia et al. (1999) study, similar procedures were used to teach the same three planning strategies, except that dialogue, observation, and student reflection were used to establish the rationale, value, impact, and general applicability of the three planning strategies. The three students with LD in that study overtly and consistently used the planning strategies when asked to write posttest and maintenance stories as well as persuasive essays (an uninstructed genre). Although the results from other studies in which the rationale, value, impact, and general applicability of planning strategies were also established in an interactive and reflective fashion have not usually been this positive, evidence that some of the participating children maintained and generalized the strategies taught was almost always obtained (e.g., Englert et al., 1991; Graham & Harris, 1989). Consequently, we cannot recommend that teachers simply tell students about the rationale, value, impact, and general applicability of strategies. As Wong (1994) and others (e.g., Harris & Graham, 1996) have noted, students with LD need to be active participants in thinking about and examining these issues.

The generalizability of our findings to special and general education class-

rooms is unclear. For example, the immediate, explicit, and individualized feedback regarding linkages between strategy use and writing performance provided to students in this study may be difficult to replicate in whole classes. However, there are several ways to modify the procedures we used so that this level of feedback could be easily incorporated into classroom planning strategy instruction. Students could be taught how to use a checklist as they are planning to indicate if and when they have completed each step of the strategy. In conjunction with such a checklist, students could work in pairs to evaluate each other's writing quality using a simplified scoring rubric that includes ratings for overall quality as well as genre-specific text structure elements. The rubric would serve to focus students' discussion on the most important aspects of their writing. Graphing the number of completed strategy steps alongside the quality rating for each composition could be a powerful method for increasing students' appreciation of the usefulness of the strategy. When students share their writing with others, they could be asked to reflect on how well the strategy worked for them and to offer suggestions for improving the efficacy of the strategy. Thus, through the use of a procedural facilitator, scoring guidelines, peer conferencing, and performance monitoring, students could obtain beneficial feedback tailored to their personal writing needs with little teacher intervention.

In conclusion, the present study demonstrated that the writing performance of students with LD can be improved by teaching them to set goals, brainstorm ideas, and organize their ideas in advance of writing. This finding supports the hypothesis that students with LD benefit from explicit writing instruction designed to help them improve their planning behaviors. It also adds to a growing body of literature showing that the writing difficulties of students with LD are due at least in part to difficulties with plan-

ning (Graham & Harris, 2000), as instruction in planning resulted in improvements in these children's writing performance.

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AUTHORS' NOTES

1. Our sincere gratitude goes to the students at the University of Maryland who served as instructors and scorers for this study and to the faculty, staff, and administrators of Montgomery County Public Schools, who provided invaluable assistance in the completion of this project.
2. This research was supported by a student-initiated research grant (H023B70044) from the Office of Special Education Programs, U.S. Department of Education. Any opinions, findings, conclusions, or recommendations expressed in this manuscript are those of the authors and do not necessarily represent the views of the U.S. Department of Education.
3. Portions of this manuscript are based on the dissertation of the first author, submitted in partial fulfillment of the requirements for the doctor of philosophy degree for the Department of Special Education at the University of Maryland.

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APPENDIX A

Teacher Evaluation of Story Elements

- | | | | | | | | | | | | | | | | | | | | | | |
|--|-----|------|------|-------|---|------|-----|------|------|-------|---|---|---|---|---|---|------|-----|------|------|-------|
| <p>1. ____ The setting (when, where, who) was included in the story.
 The quality of the description of the setting was,</p> <table border="0" style="margin-left: 40px;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> </tr> <tr> <td>poor</td><td>bad</td><td>fair</td><td>good</td><td>great</td> </tr> </table> | 1 | 2 | 3 | 4 | 5 | poor | bad | fair | good | great | <p>4. ____ Consequences of the actions were included in the story.
 The quality of the description of the consequences was,</p> <table border="0" style="margin-left: 40px;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> </tr> <tr> <td>poor</td><td>bad</td><td>fair</td><td>good</td><td>great</td> </tr> </table> | 1 | 2 | 3 | 4 | 5 | poor | bad | fair | good | great |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | |
| poor | bad | fair | good | great | | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | |
| poor | bad | fair | good | great | | | | | | | | | | | | | | | | | |
| <p>2. ____ A problem was included in the story.
 The quality of the description of the problem was,</p> <table border="0" style="margin-left: 40px;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> </tr> <tr> <td>poor</td><td>bad</td><td>fair</td><td>good</td><td>great</td> </tr> </table> | 1 | 2 | 3 | 4 | 5 | poor | bad | fair | good | great | <p>5. ____ Character emotions were included in the story.
 The quality of the description of the emotions was,</p> <table border="0" style="margin-left: 40px;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> </tr> <tr> <td>poor</td><td>bad</td><td>fair</td><td>good</td><td>great</td> </tr> </table> | 1 | 2 | 3 | 4 | 5 | poor | bad | fair | good | great |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | |
| poor | bad | fair | good | great | | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | |
| poor | bad | fair | good | great | | | | | | | | | | | | | | | | | |
| <p>3. ____ Actions to solve the problem were included in the story.
 The quality of the description of the actions was,</p> <table border="0" style="margin-left: 40px;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> </tr> <tr> <td>poor</td><td>bad</td><td>fair</td><td>good</td><td>great</td> </tr> </table> | 1 | 2 | 3 | 4 | 5 | poor | bad | fair | good | great | <p>6. ____ The overall quality of the story was,</p> <table border="0" style="margin-left: 40px;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> </tr> <tr> <td>poor</td><td>bad</td><td>fair</td><td>good</td><td>great</td> </tr> </table> | 1 | 2 | 3 | 4 | 5 | poor | bad | fair | good | great |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | |
| poor | bad | fair | good | great | | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | |
| poor | bad | fair | good | great | | | | | | | | | | | | | | | | | |

APPENDIX B

Analytic Story Quality Rating Scale

Organization

8. The organization of the story elements is logical and the story flows naturally with no digressions (intrusive or unrelated ideas) or inconsistencies (missing or contradictory information).
6. The organization of story elements is fairly logical, but some minor digressions or inconsistencies are present that do not greatly interfere with the story flow.
4. The organization of the story is disrupted by major digressions or inconsistencies that make the sequence of events in the story awkward.
2. Although some limited organization appears to be used, a complete story episode (problem, action, and resolution) is not present.

Appeal

8. The story is written with such imagination that the reader is enthralled by the plot. Humor, foreshadowing, flashbacks, and other creative stylistic devices are effectively used to engage the reader.
6. The story is written in such a way as to pique the reader's interest, although there may be some parts in which the reader's interest wanes. Stylistic devices are used, but they are not very effective.
4. The reader's interest is not maintained through the end of the story. The reader finds only minimal appeal in the plot and characters. Stylistic devices are not used at all.
2. The story is generally unimaginative and uninteresting. The reader does not feel connected to the plot or characters. No stylistic devices are used.

APPENDIX C

Analytic Essay Quality Rating Scale

Organization

8. The essay appears to be organized according to a plan that is sustained throughout the essay. Unity is strongly evident, with no digression from the primary plan or theme.
6. The essay is fairly well organized with only minor digression from a plan.
4. The essay lacks consistent organization and departs substantially from a plan.
2. The essay does not appear to follow a coherent plan.

Clarity

8. The writer systematically defines and defends a point of view using at least two well-developed lines of argument, one of which supports the writer's position and one of which addresses plausible counterarguments.
6. The writer defines and defends his or her premise using one well-developed line of argument that either supports the writer's point of view or addresses plausible counterarguments.
4. The writer defines and defends a point of view via one or more clusters of arguments (a reason asserted with no more than two bits of evidence or related appeals) that are not linked together. A clear line of argument to support the premise or to address opposing views is not developed.
2. The writer fails to articulate a clear premise or to support position statements. Any arguments or appeals that are presented are tangential.

NOTICE

Art for 2003 JLD Covers Sought

For the past several years, the covers of the *Journal of Learning Disabilities* have featured original artwork by individuals with learning disabilities. We plan to continue showcasing the artwork of individuals with LD, and we are now soliciting art for the 2003 issue covers.

Individuals with learning disabilities of any age are encouraged to submit their original work for consideration. The form may be a painting, color photograph, sculpture, computer-generated graphic, or any comparable medium. The work must not exceed a maximum of 24" by 36"; three-dimensional work must not exceed 20 pounds. Two entries per participant may be submitted.

Each entry must include the following information: (a) the artist's name, age, address, and phone number; (b) the title of the work; (c) the specific medium used; and (d) the size of the work. The actual submission of the art should be a color reproduction in one of the following formats: photograph (not a Polaroid), slide (35 mm), or 3½" computer disk (saved as an EPS or TIFF file on Zip disk, 128/230 magnetic-optical disk, or 44/88 SyQuest cartridge).

Entries should be postmarked by September 18, 2002. PRO-ED assumes no responsibility for entries damaged in the mail. Artists will be notified of our selection by mid-November 2002. Entries, requests for more information, or questions should be directed to Judith K. Voress, Periodicals Director, PRO-ED, 8700 Shoal Creek Blvd., Austin, TX 78757-6897; 512/451-3246, ext. 630; FAX: 512/302-9129; e-mail: jvoress@proedinc.com.